

## PART II

# SUPRASEGMENTAL UNITS OF SPEECH

## CHAPTER 7

### INTONATION IN ENGLISH AND UKRAINIAN

#### 7.1. INTRODUCTION

Intonation is one of the most important means of organizing a phrase out of a single word or a succession of words, it organizes an overphrasal unity consisting of phrases and a text consisting of overphrasal unities. Intonation can change the communicative type of the sentence altering a statement into a question, an order, a request, etc. Due to intonation different thoughts and feelings, various connotations and emotions may be conveyed by the speaker and perceived by the listener.

Though the interest to the phenomenon of intonation existed centuries ago owing to the development of the theory of verse and the art of public speeches, scientific investigations of intonation were carried out only in the 18th century.

M.V. Lomonosov was the first scientist whose method of investigating intonation was systematic. In his book devoted to Russian grammar (1765) the definition of intonation as a complex phenomenon was given and for the first time the main physical characteristics of intonation were mentioned:

- «выходка» (tone or melody);
- «напряжение» (intensity);
- «протяжение» (length);
- «образование» (timbre).

M.V. Lomonosov was the first to differentiate between the linguistic characteristics of intonation and the individual ones, belonging to each definite individual in the same way as fingerprints do.

For a long time intonation was not investigated and Lomonosov's treatment of intonation as a complex unity of several acoustic components was forgotten.

Rather many linguists of the early period of the 20th century treated intonation as one of its components – tone or melody, contrary to M.V. Lomonosov's definition of intonation as a complex phenomenon including several acoustic characteristics.

A narrow definition of intonation as a tone was given by the representatives of the so called "Old English School" in the 1930s-40s. D. Jones, H. Sweet, W. Allen understood intonation as the variations which take place in the pitch of voice (tone). The same narrow definition of intonation was given by L. Armstrong and S. Ward, Russian phoneticians Vitomskaya, O. Dikushina (1965) and others. E. Sciretta defined intonation as a combination of two components – tone and stress.

The above mentioned linguists identified intonation with one or two of its components. Such definitions were too narrow and are considered wrong as they do not reveal the essence of intonation.

The problem of the structure of the utterance and other scientific problems of intonation were discussed in the first half of the 20th century.

H. Palmer (1922) gave a detailed description of the intonation structure of the utterance defining its structural units (elements): **head** – the first stressed syllable with the following stressed and unstressed syllables up to the last stressed syllable; **nucleus** – the main stress, or the semantic centre of the utterance; **tail** – unstressed and in some cases stressed syllables after the main stress.

H. Palmer's division of the utterance into structural units proved to be very important for prosodic analysis. The introduction of the term "structural units" enabled the investigators to compare the intonation of utterances, expressing various semantic, modal, emotive and other connotations in different grammatical types of phrases, as each of them consists of the same structural units, the acoustic characteristics of the intonation of which are to be analyzed.

B. Sokolov, A. Shachmatov, F. Fortunatov and others emphasized the importance of intonation in human communication, considered intonation to be one of the most important syntactic means of the language and the most characteristic feature of speech.

The first linguist who treated intonation in close connection with the

grammatical structure of the language was A.M. Peshkovsky.

A.M. Peshkovsky in his books, devoted to the problems of Russian intonation and grammar (1935) emphasized the importance of examining the semantic function of intonation.

From the 1940s a vigorous growth of investigations devoted to the intonation problems have been observed. To a certain extent it may be explained by the employment of new electronic speech recording and speech analyzing devices, special linguistic computer programmes in numerous laboratories of experimental phonetics in the former USSR and abroad, which made phonetic investigations not so laborious and opened new possibilities for scientists.

A valuable contribution to the study of the theory of intonation was made by L.V. Shcherba who pointed out in his early works that there exist two equally important functions of intonation – semantical-segmental and organizing. L.V. Shcherba (simultaneously with T. Grammont and V.V. Vinogradov) introduced the notion of a sense-group which was further developed by him (1953, 1963).

The “sense-group” notion proved to be of great importance for the development of intonation and its pragmatic aspect.

Various theoretical and applied phonetic problems were widely investigated in the 20th century and those of intonation were among them.

The main problems of intonation which scientists worked out and are working out now are the following:

- definition of intonation – its acoustic and perceptual characteristics;
- components of intonation;
- tone as the main component of intonation;
- intonation structure of different languages;
- functions of intonation;
- intonation of suprasegmental speech units;
- typological analysis of intonation.

The definition and the nature of intonation continued to be investigated.

The first linguists who shared M.V. Lomonosov's treatment of intonation as a complex unity of several acoustic characteristics were V.N. Vsevolodsky-Gengross (1922) and S.J. Bernstein (1940).

V.N. Vsevolodsky-Gengross understood intonation as a sequence of interdependent syllabic tones which can be differentiated by pitch, intensity, tempo and timbre in each language.

S.J. Bernstein defined intonation as a complex unity of several characteristics, as a conglomeration of the phonetic factors of a language which organizes connected speech phonetically into phrases, establishes semantic relation between the parts of phrases, ensures the realization of declarative, interrogative or imperative meaning of the phrases, makes it possible to express different shades of meaning and emotions.

At present most scientists treat intonation similar to M.V. Lomonosov's treatment as a unity of several physical characteristics (Torsuyev G.P., Zinder L.R., Artjomov V.A. and others).

The most detailed and profound definition of intonation was given by G.P. Torsuyev. In his book of English phonetics (1950) he defined intonation as a complex unity of pitch, intensity, timbre and tempo of speech, which is one of the principle means of expressing the sense of the utterance.

The importance of G.P. Torsuyev's definition of intonation lies in the following:

1. intonation is treated as a complex unity of its components;
2. attention is paid to the interdependence of the components of intonation;
3. this definition emphasizes the role of intonation in the main function of the language – to serve the aims of human communication.

V.A. Vassilyev, O.V. Burenkova, A.R. Katanskaya, L.D. Lukina, L.R. Maslova, E.I. Torsueva in their book "English Phonetics" (1962) emphasized the role of perceptual characteristics of intonation. On the basis of the corresponding grammatical structure of the utterance and its vocabulary, the unity of acoustic characteristics of intonation makes it possible to express the thoughts, feelings and

emotions that can give some information and ask for it.

Four objective acoustic characteristics of intonation are perceived by a human ear as four communicatively relevant subjective components of intonation:

1. objective acoustic characteristic of pitch or tone corresponds to subjective perceived characteristic of melody;
2. objective acoustic characteristic of intensity corresponds to subjective perceived characteristic of strength;
3. objective acoustic characteristics of spectral frequencies correspond to subjective characteristics of voice quality on the level of perception;
4. objective acoustic characteristics of duration corresponds to the subjective perceived characteristic of length tempo and pauses.

Objective acoustic characteristics are realized by the speaker in speech and perceived by the listener as subjective qualities of speech. Objective and subjective characteristics are equally important. They make it possible to understand the meaning of the utterance and its connotations, the feelings, emotions and volition of the speakers.

As it has been mentioned above G.P. Torsuyev's definition of intonation comprises main acoustic components:

1. tone or melody that is the fluctuation of the voice in speech;
2. intensity – energy of force of pronunciation resulting in the degree of sentence stress;
3. duration – the speed of utterance or tempo and the distribution of pauses;
4. timbre – voice quality.

Fluctuations of pitch of voice are observed in all the structural elements of the utterance – pre-head, head, nucleus, tail and are relevant in each of them, but the fluctuation of the pitch and its level in the final stressed syllable – the nucleus, is the most important and communicatively relevant.

G.P. Torsuyev's definition of intonation on the acoustic level is recognized by the majority of phoneticians of today.

The number of terminal fundamental tones in speech, their configuration and

level have been discussed for a long time.

J.D. O'Connor and G. Arnold in their book "Intonation of Colloquial English" (1973) systematically presented numerous examples to underline the importance of the semantic function of intonation.

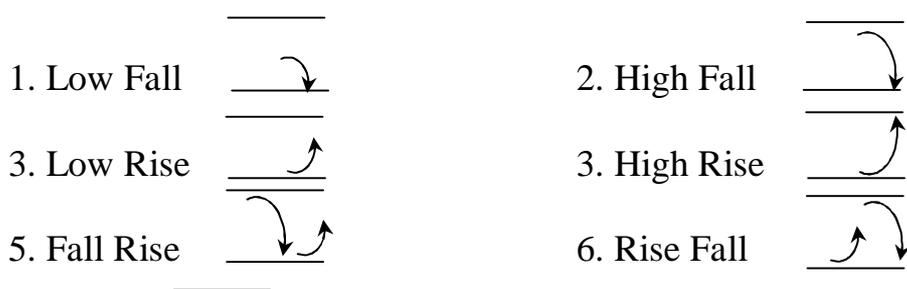
D. Crystal in his book "Prosodic System and Intonation in English" (1969) tried to develop the theoretical basis according to which intonation should be integrated within a more general theory of suprasegmental units, remaining at the same time an important phenomenon with its characteristic features which cannot be ignored.

D. Crystal gave a comprehensive description of acoustic characteristics of intonation and emphasized its semantic and grammatic functions.

British phoneticians presented a detailed description of characteristics of different intonation contours and intonation structures in English speech.

British linguists R. Kingdon (1968), D. Jones (1956), J.D. O'Connor (1967) and others, having rejected the assertion of Ch. Hockett (1960), S. Ward, W.S. Allen (1954), M. Halliday and others of the existence of one or two fundamental primary tones in English – Fall and Rise, reconsidered the number of the main terminal tones in English and supported the existence of six fundamental tones.

J.D. O'Connor and G.F. Arnold (Intonation of Colloquial English, 1973) recognized the following six functional tones in English:



Level tone  is very rare in English and is not considered as a functional terminal tone by most English phoneticians.

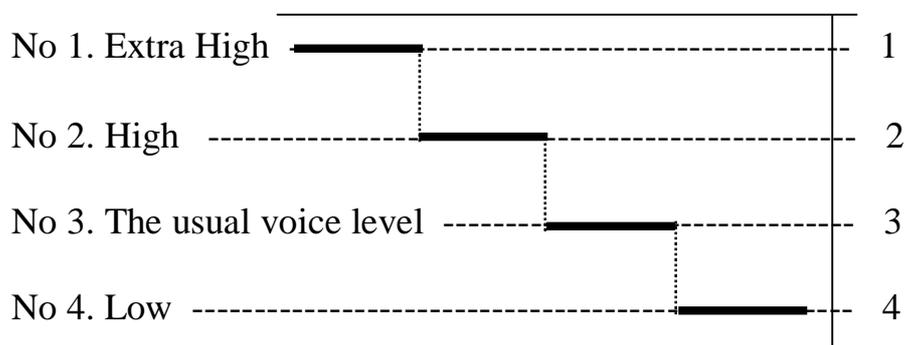
R. Kingdon further developed H. Palmer's principle of structural elements of the phrase – head, nucleus and tail adding the fourth element – **pre-head**. R. Kingdon in his book "The Groundwork of English Intonation" (1958) presented a thorough

analysis of simple and complex tones in English, considering tone to be the most active element of intonation.

Besides the peculiarities in the configuration of the tone it may be characterized by its level, frequency interval, pitch, character of the movement of the tone, etc.

The majority of American linguists consider pitch level to be the main characteristic feature of the intonation of American English.

K.L. Pike in his book “Intonation of American English” (1947) gave a detailed description of pitch contours which may express all thoughts and attitudes and he emphasized the leading role of pitch levels in the intonation structure of American speech. Four relative to each another pitch levels serve as a basic building block for intonation contours:



According to K. Pike (1967) four levels of intonation contours are enough to express all the differences in the meaning of the utterance in the American variety of English.

Ch. Fries in his book “The structure of English” (1950) wrote that a variety of pitch sequences are met in the intonation structure of any language especially at the end of the sentence and he also defined intonation as significant pitch contours including four levels: Extra High, High, Usual and Low.

In analysing the intonation of the utterance all the peculiarities of the tone are to be taken into consideration: the level of the tone; the configuration of the tone, i.e. the character of the movement of the tone or the type of the so-called intonation contour (IC); the range of pitch, i.e. the difference between the highest and the lowest meanings of the fundamental frequency; the speed of the movement of the tone, etc.

The English phonetician R. Kingdon in his book “The Groundwork of English Intonation” (1958) made one of the first attempts to present intonation as a system, giving a detailed classification analysis of the basic types of intonation, which he identified with tone, and the use of tones in speech, underlining close cooperation of tone and stress but underestimating the semantic functions of intonation.

European linguist V. Jassem in his book “Intonation of Conversational English” (1959) distinguished twelve simple and compound tones in English including into the system of tones their full, low, high varieties. It’s necessary to note that V. Jassem’s classification of tones is too complicated and overloaded.

V. Jassem admits intonation partly referential, partly grammatical, it is correlated with the syntax of the sentence.

The main functions of intonation according to V. Jassem, are to signal the end of the sentence or parts the sentence consists of and to differentiate the types of the sentence.

J.D. O’Connor in his earlier publications (1956) and in the book “Intonation of Colloquial English” by J.D. O’Connor and G. Arnold (1961) made the first real attempt to treat intonation as a system both in regard to form and meaning. Their theory was based on the assumptions that intonation in significant utterances, which are different only in respect to intonation, may differ from each other in meaning; intonation is systematic – there is a system of limited number of relevant pitch patterns in any language, which are used to produce definite meanings; intonation is characteristic – there are typical pitch peculiarities of any given language.

The authors recognized 6 main functional tones in English:

Low Fall, High Fall, Low Rise, High Rise, Fall-Rise and Rise-Fall.

In the second edition of the book the authors deal with ten tone-groups including the characteristics of the functional units of the utterance – pre-head, head, nucleus, tail.

Tone is the main component of intonation, but the role of other components of intonation is also important.

The chief functions of intensity are the following:

a) to provide the energetic structure of speech units and to organize it with the aid different amounts of energy of stressed and unstressed syllables or sentence stress;

b) to single out some syllables with the main, logic and emotional sentence stress to reveal their relative importance in the utterance;

c) to provide the basis for the rhythmic structure of the utterance.

The tempo of speech may be defined as the speed with which a word or an utterance as a whole is pronounced. Usually three degrees of tempo are distinguished by phoneticians – normal, quick and slow.

Tempo of speech as a component of intonation has some logical and emotional functions. Tempo may become slower to emphasize semantically important words or sense-groups in a phrase. Words, sense-groups or sentences that express some secondary idea are often pronounced quicker. Passive emotions such as depression, sorrow are usually also characterized by a slow tempo. Violent emotions of anger, irritation are usually characterized by a quicker tempo.

Rhythm is closely connected with the tempo of speech. Its aim is to organize an utterance by the alteration of stressed and unstressed syllables.

Timbre is the specific colouring of human voice which shows the speaker's feelings, mood and emotions. From the physical and functional points of view timbre is the least investigated component of intonation.

Intonation as a supplementary system, enables the speaker to present the meaning which is not present in syntactic and lexical structures and to express adequately the meaning of the utterance, the speaker's attitude to the content of the utterance, his feelings, volition and emotions.

Intonation performs a number of functions, the main of which are:

1. The organizing function – intonation organizes the speech units of the lower level into the speech units of the high suprasegmental level: phonetic words into sense-groups, sense-groups into phrases, phrases into overphrasal unities, overphrasal unities into the speech unit of the highest level – the text. On the other

hand, with the help of intonation the speech unit of the highest level – the text, may be divided into overphrasal unities, overphrasal unities may be divided into phrases, phrases into sense-groups.

2. The semantic function – intonation ensures the meaning of the utterance and semantic relations within it.

3. The communicative function – intonation participates in differentiating the communicative types of phrases – statements, questions, requests, orders, etc.

4. The expressive function – intonation expresses logic relations within different speech units and the text as a whole.

5. The emotive and modal function – intonation ensures emotional and modal shades of meaning in the utterance and its timber. The emotive and modal functions of intonation are closely connected with the expressive function.

In modern linguistics intonation is continued to be understood as a complex structural unity of prosodic elements, including pitch of melody, intensity, duration, pauses and timbre of speech which are relevantly important in differentiating functional types of speech units.

Intonation is defined by V.V. Potapov (1997) as a means of division and integration of the utterance conveying semantic, expressive, emotional or modal meaning and connotations.

The second half of the 20th century was characterized by the development of systematic functional type logical aspect of linguistic analysis of intonation.

Intonation began to be analyzed systematically taking into consideration the characteristics specific for one definite language, or typical of a group of languages and universal characteristics of all the languages (usually of a definite group of languages – Germanic, Romanic, and others).

Functional-typological aspect of examining the phenomena of intonation suggests two kinds of methods: 1) the functional method and 2) the typological method.

The functional method of intonation analysis reveals features of intonation, characterizing various opposing language units in different languages.

The typological method of examining intonation supposes the analysis of universal intonation characteristics, typical of a group of languages or all the languages.

Intonation speech characteristics of individual languages and universal characteristics were described by the phoneticians of different countries. Among them R. Kingdon (1951), D. Bolinger (1955), E.A. Bryzgunova (1984), T.M. Nikolayeva (1997), N.D. Svetozarova and others may be mentioned.

T.M. Nikolayeva gave a detailed description of intonation structures of Russian oral speech, emphasized the importance of paying due attention to different prosodic characteristics of speech units of segmental and suprasegmental levels.

L.V. Zlatoustova (1982, 1999) described the principles of the prosodic organization of speech, worked at the problems of cooperation between grammatic and prosodic characteristics and the rules of prosodic organization of the text.

A valuable contribution to the theory and practice of typological-functional principles of intonation analysis was done by scientists at the laboratory of experimental phonetics of Russian University of people's friendship.

Methods of systematic typological analysis of intonation continued to be developed by the linguists of the above mentioned University. Applying the method of systematic typological analysis V.I. Petryankina, S.S. Chromov, A.A. Atambekova and others used typological-comparative methods of experimental phonetic analysis which stimulated prosodic investigations and made it possible to single out universal acoustic characteristics of a large group of languages.

In Ukraine intonation began to be examined theoretically and instrumentally in the 1960s.

J.K. Bilodid in his book "The Problems of development of speech in Ukrainian prose" (1956) wrote that investigations of intonation in Ukrainian linguistics had not yet begun. L.A. Bliznitchenko (1964) stated that experimental investigations of intonation in Ukraine had just begun.

The centre of phonetic experimental investigations of intonation of the Ukrainian speech was the National Academy of Sciences of Ukraine.

The first theoretic and practical problems worked out by the phoneticians were the role of intonation in oral speech, the coordination of the intonation level with other speech levels – grammatic level, semantic level, stylistic level, the intonation characteristics of various communicative types of phrases.

The results of the first phonetic instrumental investigations of intonation in Ukraine were published in Kiev in two collective monographs “Intonation of Speech” (1968) and “Intonation Structure of Speech” (1972) edited by L.A. Bliznitchenko. The monographs were devoted to the role of intonation in the logic structure of the utterance (Волик И.В.), intonation of various communicative types of phrases – statements (Багмут А.Й.), questions (Дубовский Ю.А., Пилипенко О.Ф.), and enumerations in English (Дворжецкая М.П) and others.

L.A. Bliznitchenko’s article “Peculiarities of Hypnotic Speech Intonation”, published in the second monograph was met with great interest by scientists and teachers.

The first theoretical and electroacoustic investigations of intonation became the basis for further development of intonology in Ukraine.

The basic object of investigation in the Laboratory of experimental phonetics of the Odessa State University was intonation.

The problems of intonation examined at the Laboratory were the types of the functional tones in English and Ukrainian and the configuration of the functional tones (Nushikyan E.A., 1969; Zinovjeva A.M., 1970), acoustic correlates of emotional speech (Kolymba S.N., 1973; Nushikyan E.A., 1987), correlation between intonation and semantics or grammatic characteristics of the utterance (Grigoryan N.R., 1984; Makarevich L.A., 1984; Moisenok L.A., 1982), intonation of communicative types of phrases (Kambulenko N.S., 1987), Voitsehovsky P.N. (1988), intonation structure of instructions (Voloshin V.G., 1988) and others.

Intonation of emotional speech was elaborated in the doctoral thesis by E.A. Nushikyan (1987) and intonation of modality in the doctoral thesis by T.M. Koroljova.

Among other investigations of intonation at the end of the 20th century in

Ukraine the following investigations of intonation should be mentioned.

The main intonation problems the phoneticians worked at in Ukraine at that time were the intonation structure of the utterance, its role and functions in native and non-native oral speech, typological analysis of acoustic characteristics of definite intonation structures in oral speech.

A collective monograph on intonation expressiveness in radio and television transmissions was published in Kiev in 1994 (Багмут А.И., Бровченко Т.А., Борисюк И.В., Олейник Г.Н.). Taking into consideration the enormous importance of adequate radio and television transmissions a thorough electroacoustic phonetic investigation of the speech of mass media with the help of subjective and objective methods of analysis was carried out.

The results of the experiments made it possible to work out and suggest objective methods of evaluation of the announcers and commentators' speech. Phonetic experimental investigations in Ukrainian were carried out in the Laboratory of experimental phonetics of the National Academy of Sciences of Ukraine in Kiev, in the Laboratory of experimental phonetics at the Kiev National University and in the Laboratory of experimental phonetics at the Odessa National University.

Linguistic bilingual principles (Жлуктенко Ю.А., 1974, 1979) became the basis for contrastive investigations of English and Ukrainian intonation in colloquial speech. Intonation of different communicative types in English was studied in comparison with the Ukrainian intonation structure of the corresponding types of sentences in teaching English in Ukrainian Universities.

The intonation of the text as the highest unit of speech was analyzed in English and Ukrainian speech.

The following problems of textology were analyzed most often: the composition of the text, the overphrasal unities, the connection between them in the text (Лосева А.М., 1968; Бровченко Т.А., 1978; Дубовский Ю.А., 1978; Борисюк И.В., 1990 and others).

The methods of experimental statistic analysis became an integral part of phonetic investigations, statistic methods began to be applied in scientific study of

intonation with the purpose of solving the problems of the reliable number of speakers and the amount of experimental data to prove the reliability of the difference between different groups of experimental data.

The possibilities and the mechanism of employment of the method of statistic analysis in phonetic investigations were elaborated by a group of linguists and mathematicians and published in their book “Methods of statistic analysis in phonetic investigations” (Бровченко Т.А., Варбанец П.Д., Таранец В.Г., 1976). A book devoted to the elementary statistics for linguists was written by I.A. Nosenko (1981) and to quantitative methods of linguistics by Levitsky V.V. (2004).

The beginning of the 21st century was characterized by intensive intonological investigations. The scientists continued to elaborate phonetic problems of the preceding century and worked at the intonation problems of today.

Semantic function of intonation, rather widely discussed in the 20th century, continued to be studied nowadays. The problems of intonation semantic emphasis continued to be in the centre of the linguists’ interests (Зубкова Л.Г., 1999; Прокопова О.Г., 2000; Кодзасов С.В., 2001; and others).

The system of prosodic means of realization of meaning of English emotional text was established (Калита А.А., 2003).

The methods of experimental investigation of intonation continue to be improved and perfected, some problems of experimental investigations are discussed (Венцов Л.В., Касевич В.Б., 2001), a method of the investigation of the perception of phrase intonation is suggested (Светозарова Н.Д., 2001).

The problems of prosodic organization of oral speech communication (Блохина Л.П., 2004) and linguistic and paralinguistic functions of prosody continue to be investigated (Потапова Р.К., 2004).

The problems of Ukrainian phonology (Багмут А.Й.) and the functions of intonation (Прожегина І.) were discussed in the collection of articles of the Kiev National University (2004).

Numerous other theoretical and applied problems of intonation as well as phonetics in general are being investigated by linguists in the 21st century.